

means to coupling plate means of said second plurality of capacitive coupling plate means whereby a second plurality of varying capacitance respectively coupled to said first plurality of varying capacitance is provided.

25. The position transducer as set forth in claim 24 wherein the said varying in area from coupling plate means to coupling plate means of said first plurality of capacitive coupling plate means is linear so that said first plurality of capacitance varies linearly from capacitance to capacitance.

26. The position transducer as set forth in claim 25 wherein the said varying in area from coupling plate means to coupling plate means of said second plurality of capacitive coupling plate means is linear and the respective sums of the areas of individual ones of said first plurality of capacitive coupling plate means and the corresponding individual ones of said second plurality of capacitive coupling plate means are constant from sum to sum so that the respective sums of individual ones of said first plurality of varying capacitance and the corresponding individual ones of said second plurality of varying capacitance respectively coupled thereto are constant from sum to sum.

27. The position transducer as set forth in claim 26 wherein the said first plurality of capacitive coupling plate means and the said second plurality of capacitive coupling plate means each comprise a triangular conductive plate to form a complementary pair of drive plates, one being the complement of the other such that the said sums of said area and the said sums of said capacitance are constant in accordance therewith.

28. The position transducer as set forth in claim 27 wherein each of the plates of said second plurality of individual coupling plates are respectively integral with the corresponding ones of said first plurality of individual coupling plates thereby forming a plurality of individual integral coupling plates to be shared by each of the triangular conductive plates comprising said first and second plurality of capacitance coupling plate means.

29. The position transducer as set forth in claim 29 wherein said driving means further includes Y-direction drive means the same as the recited X-direction drive means and wherein individual ones of a plurality of Y-direction position sensing grid line means for said position transducer are respectively coupled at one end to individual ones of the plurality of individual integral coupling plates of said Y-direction drive means.

30. The position transducer as set forth in claim 29 wherein said driving means includes a second X-direction drive means and a second Y-direction drive means respectively the same as

the recited X-direction drive means and Y-direction drive means with individual ones of their respective plurality of individual integral coupling plates respectively coupled to the opposite ends of individual ones of the respective plurality of X-direction grid lines and Y-direction grid lines.

31. The position transducer as set forth in claim 29 wherein said driving means further includes means for alternately energizing one of said X-direction and Y-direction drive means with said varying voltage so that during a first time interval one of the triangular conductive plates of said complementary pair of drive plates is energized to provide a voltage distribution on the position sensing grid lines corresponding thereto as a linear function of position and during a second time interval both of the triangular conductive plates of said complementary pair of drive plates are energized to provide a voltage distribution on said grid lines which is constant with position.

32. A capacitive voltage divider for a position transducer comprising:

first and second conductive plates;

a plurality of capacitance plates each coupled to both said first and second conductive plates so that the area of respective individual ones of said plurality of plates capacitively coupled to one of said first and second conductive plates varies over said plurality from one to another and so that each of the sums of the capacitance area of said first and second conductive plates capacitively coupled to the respective plates of said plurality of capacitance plate is equal;

a plurality of position sensing grid lines with individual ones of said plurality of grid lines coupled respectively to individual ones of said plurality of capacitance plates; and control circuit means including means for energizing said first conductive plate with an alternating voltage when said second conductive plate is at a fixed potential so that the respective output voltages on said plurality of grid lines varies as a function of the geometric configuration of said first plate.

33. The capacitive voltage divider as set forth in claim 32 wherein the respective areas of said first conductive plate capacitively coupled to respective ones of said plurality of capacitance plates vary linearly in size from area to area.

34. The capacitive voltage divider as set forth in claim 33 wherein said control circuit means further include means for energizing said second conductive plate so that the respective output voltages on said plurality of grid lines is constant from grid line to grid line.

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